

AMENDMENTS TO THE CLAIMS

The listing of claims below replaces all prior versions of claims in this application.

1. (Currently Amended) A positive-displacement vacuum pump comprising:

a pair of pump rotors rotatably disposed in a casing, said pump rotors being rotatable synchronously in opposite directions;

a motor configured to rotate said pump rotors about their own axes; and

a pump-rotor controller for controlling rotation of said pump rotors through said motor in accordance with a predetermined pattern when said vacuum pump is started, the predetermined pattern ~~including a combination of at least two of rotation of said pump rotors in a forward direction, rotation of said pump rotors in a reverse direction, and stop of the rotation~~ comprising a pattern of driving said pump rotors in the order of rotation in a forward direction, stop of the rotation, and rotation in the forward direction.

2. (Cancelled).

3. (Cancelled).

4. (Cancelled).

5. (Previously Presented) A positive-displacement vacuum pump according to claim 1, further comprising:

a state-judging device for judging whether said pump rotors are rotated normally or not when said vacuum pump is started;

wherein when said state-judging device judges that said pump rotors are not rotated normally at the time of starting said vacuum pump, said pump rotors are rotated in accordance with said predetermined pattern.

6. (Currently Amended) A method of starting a positive-displacement vacuum pump having a pair of pump rotors rotatably disposed in a casing, said pump rotors being rotatable synchronously in opposite directions, said method, comprising:

rotating said pump rotors about their own axes by a motor in accordance with a predetermined pattern when said vacuum pump is started, the predetermined pattern ~~including a combination of at least two of rotation of said pump rotors in a forward direction, rotation of said pump rotors in a reverse direction, and stop of the rotation~~ comprising a pattern of driving said pump rotors in the order of rotation in a forward direction, stop of the rotation, and rotation in the forward direction; and

rotating said pump rotors by said motor in said forward direction in a steady state for evacuation.

7. (Cancelled).

8. (Cancelled).

9. (Cancelled).

10. (Previously Presented) A method of starting a positive-displacement vacuum pump according to claim 6, further comprising:

judging whether said pump rotors are rotated normally or not when said vacuum pump is started;

wherein said pump rotors are rotated in accordance with said predetermined pattern when said pump rotors are judged not to be rotated normally.

11. (Currently Amended) A method of starting a positive-displacement vacuum pump having a pair of pump rotors rotatably disposed in a casing, said pump rotors being rotatable synchronously in opposite directions, said method comprising:

judging whether said pump rotors are rotated by a motor normally or not when said vacuum pump is started;

rotating said pump rotors about their own axes by said motor in accordance with a predetermined pattern when said pump rotors are judged not to be rotated normally, the predetermined pattern ~~including a combination of at least two of rotation of said pump rotors in a forward direction, rotation of said pump rotors in a reverse direction, and stop of the rotation~~ comprising a pattern of driving said pump rotors in the order of rotation in a forward direction.

stop of the rotation, and rotation in the forward direction; and

rotating said pump rotors by said motor in said forward direction in a steady state for evacuation.

12. (New) A positive-displacement vacuum pump comprising:

a pair of pump rotors rotatably disposed in a casing, said pump rotors being rotatable synchronously in opposite directions;

a motor configured to rotate said pump rotors about their own axes; and

a pump-rotor controller for controlling rotation of said pump rotors through said motor in accordance with a predetermined pattern when said vacuum pump is started, the predetermined pattern comprising a pattern of driving said pump rotors in the order of rotation in a reverse direction and rotation in a forward direction.

13. (New) A positive-displacement vacuum pump according to claim 12, further comprising:

a state-judging device for judging whether said pump rotors are rotated normally or not when said vacuum pump is started;

wherein when said state-judging device judges that said pump rotors are not rotated normally at the time of starting said vacuum pump, said pump rotors are rotated in accordance with said predetermined pattern.

14. (New) A method of starting a positive-displacement vacuum pump having a pair of pump rotors rotatably disposed in a casing, said pump rotors being rotatable synchronously in opposite directions, said method comprising:

rotating said pump rotors about their own axes by a motor in accordance with a predetermined pattern when said vacuum pump is started, the predetermined pattern comprising a pattern of driving said pump rotors in the order of rotation in a reverse direction and rotation in a forward direction; and

rotating said pump rotors by said motor in said forward direction in a steady state for evacuation.

15. (New) A method of starting a positive-displacement vacuum pump according to claim 14, further comprising:

judging whether said pump rotors are rotated normally or not when said vacuum pump is started;

wherein said pump rotors are rotated in accordance with said predetermined pattern when said pump rotors are judged not to be rotated normally.

16. (New) A method of starting a positive-displacement vacuum pump having a pair of pump rotors rotatably disposed in a casing, said pump rotors being rotatable synchronously in opposite directions, said method comprising:

judging whether said pump rotors are rotated by a motor normally or not when said

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vacuum pump is started;

rotating said pump rotors about their own axes by said motor in accordance with a predetermined pattern when said pump rotors are judged not to be rotated normally, the predetermined pattern comprising a pattern of driving said pump rotors in the order of rotation in a reverse direction and rotation in a forward direction; and

rotating said pump rotors by said motor in said forward direction in a steady state for evacuation.